

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A method for forming a dielectric comprising:
forming a first dielectric layer over semiconductor material;
introducing a diffusion barrier material into the first dielectric layer after the first dielectric layer alone is formed, wherein introducing the diffusion barrier material includes creating a gradual gradient diffusion barrier concentration profile within the first dielectric layer in which a concentration of the diffusion barrier material proximate a first surface of the first dielectric layer is an order of magnitude higher than a concentration of the diffusion barrier material proximate a second surface opposite the first surface, the second surface being located at an interface between the first dielectric layer and the semiconductor material; and
forming a second dielectric layer over the first dielectric layer after the introducing.
2. (original) The method of claim 1 wherein the diffusion layer material includes nitrogen.
3. (original) The method of claim 1 wherein the second dielectric layer is a relatively higher K dielectric than the first dielectric layer.
4. (original) The method of claim 1 wherein the introducing further includes:
performing plasma processing of the diffusion barrier material into the first dielectric layer.
5. (original) The method of claim 1 wherein the introducing further includes:
implanting the diffusion barrier material into the first dielectric layer.
6. (original) The method of claim 1 wherein the introducing further includes:
performing a thermal anneal of material including the diffusion barrier material into the first dielectric layer.
7. (original) The method of claim 1 wherein the semiconductor material includes silicon.

8. (original) The method of claim 7 wherein the semiconductor material includes at least one of single crystal silicon, strained silicon, or silicon germanium.
9. (original) The method of claim 1 wherein the first dielectric layer includes silicon oxide.
10. (currently amended) The method of claim 1 A method for forming a dielectric comprising:
forming a first dielectric layer over semiconductor material;
introducing a diffusion barrier material into the first dielectric layer; and
forming a second dielectric layer over the first dielectric layer after the introducing,
wherein the first dielectric layer includes at least one of germanium oxide and silicon germanium oxide.
11. (original) The method of claim 1 wherein the second dielectric layer includes silicon nitride.
12. (currently amended) The method of claim 1 A method for forming a dielectric comprising:
forming a first dielectric layer over semiconductor material;
introducing a diffusion barrier material into the first dielectric layer; and
forming a second dielectric layer over the first dielectric layer after the introducing,
wherein the second dielectric layer includes at least one of one of germanium nitride and silicon germanium nitride.
13. (original) The method of claim 1 wherein the second dielectric layer includes a high K dielectric.
14. (original) The method of claim 1 wherein the high K dielectric includes at least one of a metal oxide, a metal silicate, a metal oxynitride, and a metal silicon oxynitride.
15. (original) The method of claim 14 wherein:
the metal oxide includes at least one of hafnium oxide, aluminum oxide, lanthanum oxide, titanium oxide, and tantalum oxide;
the metal silicate includes at least one of hafnium silicate, aluminum silicate, lanthanum silicate, titanium silicate, and tantalum silicate;
the metal oxynitride includes at least one of hafnium oxynitride, aluminum oxynitride, lanthanum oxynitride, titanium oxynitride, and tantalum oxynitride; and

the metal silicon oxynitride includes at least one of hafnium silicon oxynitride, aluminum silicon oxynitride, lanthanum silicon oxynitride, titanium silicon oxynitride, and tantalum silicon oxynitride.

16. (canceled)

17. (currently amended) The method of claim 1 wherein after the introducing, ~~a bottom portion of the first dielectric layer has lower concentration of the diffusion barrier material than an upper portion of the first dielectric layer the concentration proximate the first surface is on the order of approximately 4×10^{21} pcr cm³ and wherein the concentration proximate the second surface is on the order of approximately 2×10^{20} per cm³.~~

18. (original) The method of claim 1 wherein the introducing forms a barrier layer including the diffusion barrier material in an upper portion of the first dielectric layer.

19. (original) The method of claim 1 further comprising:

forming a layer of gate material over the second dielectric layer;
 patterning the layer of gate material to form a gate from the layer of gate material, the gate located over the second dielectric layer.

20. – 42 (Cancelled)